

Recombinant Human GRP1 Protein

For Research Use Only

1. Basic Product Information

Catalog No.: REP50394

Size: 10ug, 100ug

Protein Name: RAS guanyl-releasing protein 1 (Calcium and DAG-regulated guanine nucleotide exchange factor II) (CalDAG-GEFII) (Ras guanyl-releasing protein)

Synonym: RASGRP1, RASGRP

UniProt ID: O95267

UniProt Link: www.uniprot.org/uniprotkb/O95267/entry

Species Source: Human

Expression System: HEK293T eukaryotic cell expression system Sequence

Length: 797 AA

Molecular Weight: 90 KD

Protein Tag: C-terminal His6

2. Amino Acid Sequence

MGTLGKAREAPRKPSHGCRAASKARLEAKPANSFPSPSHPSLAHITQFRMMVSLGHLAKGASLDDLI
DSCIQSFDADGNLCRSNQLLQVMLTMHRIVISSAELLQKVITLYKDALAKNSPGLCLKICYFVRYWITE
FWVMFKMDASLTDMEEFQELVKAKGEELHCRLIDTTQINARDWSRKLTRIKSNTSKKRKVSLLFD
HLEPEELSEHLTYLEFKSFRRISFSDYQNYLVNSCVKENPTMERSIALCNGISQWVQLMVLSRPTPQL
RAEVFIKFIQVAQKLHLQLQNFNTLMAVIGGLCHSSISRLKETSSHPHEINKVLGEMTELLSSSRNYDN
YRRAYGECTDFKIPILGVHLKDLISLYEAMPDYLEDGKVNVDWASGVSPKPDPTISKHVQRMV
DSVFNKYDHDQDGYISQEEFEKIAASFPFSFCVMDKDREGLISRDEITAYFMRASSIYSKLGLGFPHN
FQETTYLKPTFCDCNAGFLWGVKQGYRCKDCGMNCHKQCKDLVVFECKKRAKNPVAPTENNTSV
GPVSNLCSLGAKDLLHAPEEGPFTFPNGEAVEHGEESKDRTIMLMGVSSQKISRLRKRAVAHKATQT
ESQPWIGSEGSPGPFVLSSPRKTAQDTLYVLPSTSPCSPVLVRKRAFKVWENKDSLKSKEELRH
LRLPTYQELEQEINTLKADNDALKIQLKYAQKKIESLQLEKSNHVLQAQMEQGDCS

3. Buffer Composition

Liquid format: PBS-based buffer containing 50% glycerol. Glycerol concentration can be customized upon customer request; please state special requirements when placing your order.

Lyophilized format: Buffer before lyophilization is PBS supplemented with 6% trehalose.

4. Storage Conditions

Upon receipt, store the product at -20 °C or -80 °C. Aliquot the product for on-demand use to preserve protein activity and prevent denaturation and inactivation caused by repeated freeze-thaw cycles.

5. Product Description

This product is recombinant RAS guanyl-releasing protein 1 (Calcium and DAG-regulated guanine nucleotide exchange factor II) (CalDAG-GEFII) (Ras guanyl-releasing protein) produced using the HEK293T eukaryotic cell expression system. It is suitable for in-vitro functional assays, protein-protein interaction studies, antibody preparation and other biomedical research applications.

Protein Function: Functions as a calcium- and diacylglycerol (DAG)-regulated nucleotide exchange factor specifically activating Ras through the exchange of bound GDP for GTP (PubMed:15899849, PubMed:23908768, PubMed:27776107, PubMed:29155103). Activates the Erk/MAP kinase cascade (PubMed:15899849). Regulates T-cell/B-cell development, homeostasis and differentiation by coupling T-lymphocyte/B-lymphocyte antigen receptors to Ras (PubMed:10807788, PubMed:12839994, PubMed:27776107, PubMed:29155103). Regulates NK cell cytotoxicity and ITAM-dependent cytokine production by activation of Ras-mediated ERK and JNK pathways (PubMed:19933860). Functions in mast cell degranulation and cytokine secretion, regulating FcERI-evoked allergic responses. May also function in differentiation of other cell types (PubMed:12845332).

Subcellular Localization: Cytoplasm, cytosol. Cell membrane; Peripheral membrane protein. Golgi apparatus membrane; Peripheral membrane protein. Endoplasmic reticulum membrane; Peripheral membrane protein. Note=Found both in the cytosol and associated with membranes. Relocalization to the cell membrane upon activation is F-actin-dependent. Translocates to the Golgi in response to phorbol ester or nerve growth factor. Localizes to somata and dendrites but not to axons of hippocampal pyramidal cells (By similarity).

6. Notes

- Avoid repeated freeze-thaw cycles to maintain protein stability and biological activity.
- Please specify special buffer-composition requirements at the time of order placement.
- For research use only. Not intended for clinical diagnosis, therapeutic use or commercial manufacturing.